Chapter - II

PHYSICAL GEOGRAPHY OF COASTAL ANDHRA
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Land defines the economics of utilization of natural resources and thus is much more than the mere terra-firma. It includes "all the materials and forces, which nature gives freely for man's use in land and water, in air and light and heat." The socio-economic life of the people in any epoch is determined largely by their natural environments such as the mountains, the soils, the river-system, the flora and fauna and the weather phenomena. Before proceeding with the land system, its management and its cognate problems, therefore it is necessary to have a clear picture of the physical characteristics of the region under study from ancient sources bearing in mind at the same time the profound influence these features exercised on Coastal Andhra economy and society.

Natural Geography is the life-blood of every nation's history. It determines decisively the historical, social, economical and cultural evolution of the people of an area. The internal policies and the external relations of a country or a region are governed largely by their geographical factors. It is said to be, "an analysis of the whole natural equipment of a region or some element of it, in terms of its resources and potentialities for human use." A study of natural geography in terms of society, religion, economy and polity is now gaining momentum in the world of scholars. Such a study naturally provides a solid foundation for assessing precisely the importance of economic or human geography. The physiognomy of the land's surface, rivers, hillocks, mountains and particular places on the earth's surface help us to a very great extent in this connection.

"There are physical and chemical processes developing the forms of the land's surface, the shapes of the ocean basin and differing characteristics of water and climate. They are processes by which plants and animals are spread over the earth in complex and real relation to the physical features and to each other. And there are economic, social and political processes by which mankind occupies the world's lands. As a result of all these processes the face of the earth is marked off into distinctive areas. Geography seeks to interpret the significance of the likeness and differences among places in terms of causes and consequences."
Geography not only deals with the physical features of the earth-land and sea but also atmosphere. Geology, Oceanography, Climatology and Meteorology are the other facets of physical geography. It would thus appear from the above that geography occupied a position of paramount importance. It conditions the evolution of civilizations. It shapes the socio-economic patterns. It determines political policies, both internal and external. It moulds the religious thinking of the people. Hence special significance is attached to the study of geography.

The Coastal Andhra is the region selected for the present study. This region is geographically located between 18° 20'-19° 10' and 13° 31'-15° 51' of Northern Latitude, 83° 01'-84° 54' and 79°15-80° 15' of Eastern Longitude. This region which stretches from the Srikakulam district to Nellore district of Andhra Pradesh, with its south-eastward slope looks like a waxing crescent moon. This area covers a wide expanse of low land between the Bay of Bengal and the Eastern Ghats intersected by rivers and rivulets and indented by creeks and coves. In some places it is extremely picturesque with long stretches of rice fields and river mouths. Ancient port cities and trade emporiums lie scattered along the long coast-line. The social, economic, religious and political history of this part of Andhra is in large measure shaped and influenced its geography.

The width of this Coastal plain is only 3.7 kms. in the Srikakulam district but extended afterwards to 72 kms. in delta and thereby paving the way for good agricultural activities. Again, the plain’s area is gradually reduced from 3 to 2.2 kms. in the Prakasam and Nellore districts which form the southernmost tip of the Coastal Andhra.

The Coastal Andhra is covered by several mountain ranges and hillocks. The Eastern mountain ranges start from the district of Srikakulam and extend towards south-west up to the Godavari district. They are nearly 610 to 1206 metres high from the sea level. From the district of Krishna these mountain ranges or the Eastern Ghats travel with breaks and they are known locally be several names, like Palakondalu, Velikondalu, Yerramala, Nallamala, Ratnagiri and Seshachalam.
The Eastern Ghats are referred to in the epigraphs and the *Markandeya purana* as Mahendragiri or Mahendrachala.\(^5\)

The Eastern Ghats run roughly parallel to the sea from the north-east to south-west and join the Western Ghats at Nilagiri hills in the Tamilnadu. The Eastern Ghats are not as high as the Western Ghats nor do they form a continuous chain of hills like the latter. There are several breaks and this resulted in the formation of independent hillocks having local importance and names. Further, the breaks provided big valleys which accorded fertile opportunity for the promotion of agrarian economy. Some of these hillocks became flourishing religious centres for both heterodox and orthodox religions. This is very well attested by the epigraphs found at Kalinganagara,\(^6\) Simhachalam, Vijayawada, Mangalagiri and Srisailam.\(^7\)

The Eastern Ghats are for the most part bare and rocky. “The Eastern Ghats are not watershed and the rivers of the peninsula break through them. Their geological formation is granite and gneiss and nice slate, with clay slate, horn blend, and primitive lime stone over laying. They do not exercise and great effect on meteorology, but stilt to a certain extent they break the force of the north-east monsoon, preventing it from penetrating in to land.”\(^8\)

The Eastern Ghats divided the Coastal Andhra into two distinct regions, viz., the table land on the west and the coastal strip on the east.

The geographical setting of South India is such that it slopes down eastwards to the sea board from the Western Ghats and the rivers, Godavari, Krishna and Pinakaini (Penna) which originate there drain to the east piercing the Eastern Ghats and flow down to the Bay of Bengal.

The Eastern Ghats and their surrounding regions are the treasure house for some minerals which promoted the trade and commerce. Eg. Khondalites (sillimanite-gneisses) in Srikakullam,\(^9\) manganese ores, graphite,\(^10\) alluvium and different sand stones for building construction, lime stone in Visakhapatnam and Vizianagaram districts, silicate rocks, crystalline, lime stone, sand stone graphite, mica, mineral pigments and clay in East Godavari district. Building stones known as Lower Gondwana, rocks-sulphur iron ore, chromate, china clay, kunzite, gypsum, mica and lime stone are available in plenty in the Krishna and Nellore districts. Thus
a bewildering variety of mineral wealth is available in the Coastal Andhra. It should be noted here that this mineral wealth is neither exploited in the ancient nor in medieval times. There is sufficient evidence to show that this region witnessed hectic building activity in the ancient and medieval periods. The fine quality of sandstone, lime stone and horn blend, available in the Eastern Ghats were exploited by the architects and sculptors for the construction of stupas, temples and mandapas and for carving sculptured Buddhist and Brahmanical reliefs. The ancient and medieval monuments and sculptures that are sprinkled throughout the length and breadth of Coastal Andhra bear evidence to this.

The coastal Andhra may be rightly styles as the land of rivers. The most notable of them is the Godavari which is referred to as the river of the Dakshina Patha. It originates in the Western Ghats and runs across the Deccan peninsula, and joined by several tributaries, it enters into the Coastal Andhra through Papikondalu range. After passing this point the river Godavari widens out and flows by Polavaram, Gutala, the picturesque Mahanandisvaram and Pattisam in the East Godavari district. At Dawaleswaram the Godavari river divides into two main streams, viz., Gautami Godavari and Vasishta Godavari. The eastern or Gautami Godavari, flowing past Injaram and Nilapalli, enters the sea near Point Godavari. The western or Vasishta Godavari flows nearly due south and enters the sea at Point Narasapuram in West Godavari district.

The course of the Godavari river is such that flowing past Rajahmundry, it opens out and forms a series of broad reaches studded with low alluvial islands styled lankas. The Brahmandapurana refers to this river and states that it reaches the sea by seven branches. These branches are named after the great seven sages viz., Vasishta, Vamadeva, Visvamitra, Gautama, Bharadvaja, Atreya, and Jamadagni. Thus it is called Sapta Godavari. Out of these seven branches the Bharadvaja, Visvamitra and Jamadagni no longer exist. The Hindus attach immeasurable religious importance to this river.

Numerous islands, i.e. Lankas or a permanent character stand in various parts of the East Godavari region. Very often the river branches form new and temporary islands modifying the physical features of the old ones.
The river Krishna is the other important one. It is referred to in the epigraphs as Kannabennna, Krtishna-Venna, Krishna-Venna, Krishna-Veni, and Pereru. The river Krishna literally means ‘of black hue’ as its waters are said to be black in colour. It takes its origin in the Western Ghats and flows across the peninsula from west to the east. In length, the river Krishna is shorter about 160 kms. than the Godavari river. But catchment basis is about 1,56,160 square kms which includes its tributaries. After watering a considerable area in Maharashtra and Karnataka, it enters into Andhra Pradesh, in Mahaboobnagar district and flows down separating Guntur and Nalgonda districts. On reaching the chain of the Eastern Ghats, the river turns sharply south-east and flows for about 160 kms. between the Krishna and Guntur districts, flowing through the classic land between the cities of Amaravati and Vijayawada, it finally enters the sea by two principal mouths. It is in this last part of its course that this river is largely utilized for irrigation. It is reported that “the enormous mass of silt is (Krishna) carries which has been estimated to be sufficient in flood time to cover daily an area of 8 square kms. to a depth of one foot has consequently in course of ages been deposited in the form of wide alluvial delta which runs far out into the sea and slopes gradually away from either bank of the river with the average fall of 18” to mile.”

The Pennar is the third principal river of the region. It also known as Penneru, and Pinakini. It rises in the Nandidurga hills in the Karnataka state and after a course of 456 kms. it enters into the coastal district of Nellore through a fine gorge in the Velugondalu at Somasila in the Atmakur taluk. It flows through Atmakur taluk, towards eastern direction and receives water from two tributaries, viz., the Boggeru and Biraperu at Sangam. Sangam is a small town at present where all the three merge and where an ancient Sangamesvara temple is still in existence. It is also referred to in the epigraphs. The Pennar river debouches into the Bay of Bengal by several mouths at Utukuru, located at about 29 kms. north-east of the town of Nellore.

Besides the above referred major rivers there are several minor water resources in the region which are mentioned below. These water resources like principal ones, also played a vital role in shaping the economic and agrarian history of the Coastal Andhra. They are:
Vamsadhara, Nagavali, Suvarnamukhi, Vegavati, Mahendratanaya, Gomukha, Champavati, Bahuda, Kumbikota-gedda, Machkund (known as Paleru), Sarada, Varaha, Gostani, Yeleru, Pampa, and other minor streams are found in the Srikakulam, Visakhapatnam, Vizianagaram, West Godavari and Krishna districts. Onguru, Chandhravanka, Gundlakamma, Musi, Paleru, Manneru, Kandleru, Swarnamukhi, Jayamangalam, Chitavati, Kunderu, Sagileru and Cheyyeru are the minor water resources that are found in the Guntur, Prakasam, and Nellore districts.

These minor water resources promoted agriculture. They not only feed the minor irrigation tanks but also facilitate irrigation directly wherever it is possible. It be stated here that the rivulets or the minor rivers of the Guntur, Prakasam, and Nellore districts usually dry up for a major part of the year and carry heavy floods during the rainy season or whenever there is a good rain fall on the hills. The numerous minor streams are little more than mountain torrents and their beds lie so low beneath the adjoining lands that their water is seldom available for irrigational purposes. The economic utility of the minor streams of the Guntur, Prakasam and Nellore districts is insignificant.

It is of considerable interest to note that there are important lakes in the region under study. On the north-eastern boundary of the Coastal Andhra, i.e., at the northern most tip of Srikakulam district, there is a salt water lake; it is separated by sea by sand banks. This is known as the Chilaka sarassu or Chilaka samudra. This forms a natural boundary between the modern Orissa state and Andhra Pradesh. This was the part and parcel of the Kalinga kingdom and witnessed the rule of many a dynasty right from the ancient period. This bounded on the east and the south by a low sandy ridge in some places a little more than 200 yards wide, which separates it from Bay of Bengal and north-west by the mountains which extends from the Mahanadi to the Godavari. It covers an area of 640 sq. kms. This vast area with its deep fathom served for naval anchorage and as a call of port.

The Kolleru lake is considered to be the largest fresh water lake in the country. It covers an area of 901 sq. Kms. This lake is formed by the natural depression of land between the Godavari and the Krishna river delta. One third of the lake is in the Krishna district and the remaining is in West Godavari district. It receives water through the Budameru, the Tammileru, the Pammileru and the
Gunderu. This vast lake with many inlets has only outlet in the form of Upputeru to the Bay of Bengal. This lake is referred to in the inscriptions by several names, like Kunala, Kolanu, Sarassu. It was the part and parcel of the ancient Vengi-mandal. 29

The Pulicat lake which is formed by the back waters of Bay of Bengal along the Coromandal coast is the other prominent one located in the region under our survey. It is a shallow salt water lagoon. It is 59 kms in extreme length and with a breadth varying from 5 kms. to 18 Kms. The greatest depth is about 14 to 16 feet. The Pulicat shoal served as a trading port in the east coast. Towards the extreme south-east of the coast is low sandy tract lying between Pulicat lake and sea (Sriharikota region) which is 56 kms. long and 10 kms broad. The very back of this region is covered with thick forest and mostly inhabited by the Yanadis, a scheduled tribe. Large tracts of area in this region are used for the manufacture of salt, an important economic commodity. In the modern times rich deposits of silica have been discovered and this has enhanced the economic value of the lake. Further this is paradise of fishermen, for several varieties of fishes are available in this lake. 30

The vast and long line of the Coromandal coast is very well endowed with rich soil resources which ultimately paved the way for the promotion and preservation of socio-economic and cultural developments. The nature of the rocks, physical traits of the land, climate, flora and different variety of soils played a very important part in shaping the natural geography of the east coast of Andhra. Each soil has its own physical properties like its colour, texture, structure and fertility. The soil of the east coastal strip is alluvial, the regar or the black cotton and red ferruginous series. Near the hill ranges the red varieties derived from a large admixture of the peroxide of iron are predominant but towards the coast the soil becomes finer and in the valleys there is fertile black clay. This fine clay soil has small pore spaces and hence the rate of passage of water to its lower levels is very slow. In other words this type of soil is more water retentive and heavy for ploughing. Loamy texture of the soil is the best for the plant growth and its ploughing is easier at the same time. Out of loams, sandy loam is the most favoured by the farmers.
The coastal taluks of Visakhapatnam, Vizianagaram, East Godavari, Krishna, Guntur, Praksam and Nellore districts have large arenaceous areas to a certain extent. Islands, known as *lankas* are unique to east and west Godavari districts and are covered by the silt during floods which render them very fertile and fit for tropical crops. The westward elevation and the nature of the slope of the area also influenced the formation of the soil. Much of the soil is carried from the hill slopes by transporting agents like rivers and wind, towards the valley bottoms and flat lands as alluvium. Such soil is very fertile because it is derived from different kinds of rocks from over a wide catchment. This is amply supported when we compare density of the population per square kilometer of the coastal *taluks*. The upland *taluks* are sparsely populated. This variation in population can be attributed solely to the fertility of the soil. Thus it is evident that the demography is conditioned by the natural geography.

The climatic conditions of this region vary considerably. Coromandal coast may be classified as tropical, since climatic conditions are extreme with hot summers and cold winters. The upland taluks of the region experience very hot climate. In the taluks which are very near to the sea and the deltaic taluks of Visakhapatnam, East and West Godavari, Krishna, Guntur, Praksam and the Nellore districts the climate is tolerable to some extent as the sea breeze renders it moderate. Because the up-land area is considerably away from the sea and near to the hills the climate is extremely chilly during winter while in the delta adjoining the coast the sea renders it more tolerable. The rain fall of the Coromandal coast depends entirely on the monsoons. These monsoons play an important part in the economy of the region. The fertility of the upland *taluks* and other regions is due to these monsoons. Though the south-west monsoon sets in the month of April-May of the year, its effect is felt more in the west coast of India than in the Coromandal coast. However, except the Nellore district, other districts get more quantity of rain during the south-west monsoon. On the whole the rain fall is very scanty in the Srikakulam and major parts of the Nellore districts and this factor largely contributes to the near famine conditions in these regions.

On the east-coast, on the other hand, it is the north-east monsoon which brings the rain from the Bay of Bengal. Though the temperature falls in other parts of the country as soon as the rains set in June and July, the eastern part, that is the
Coromandal coast and its adjoining region in the north-east, receives little rain and during the mid-year months mercury does not come down. In all the eastern coastal districts, showers and small storms from the north-east occur occasionally in the hot months. With the onset of the rains temperature starts falling. The Coromandal coast is a notable exception, in that the bulk of the rain fall is received during October and November. It is caused mainly by the retreating monsoon currents which pick up moisture while crossing the Bay of Bengal. The rain fall of the east coast has therefore a distinctive character.\textsuperscript{31}

It may be stated here that the temperature of the dry seasons throughout the year is determined by the direct action of the sun and wind direction.

Throughout the rainy season the course of the isotherms is mainly determined by the quantity of the rain fall and the directions of the rain-bearing winds, the former running more or less at right angles to the latter and indicating a gradual increase of temperature from the west to the east coast.\textsuperscript{32}

Thus the climate and the rain fall exercise an all embracing and unifying influence on the weather conditions of the east coast of Andhra. However, it should be noted here that the rain fall of this region is different from the other parts of the state, as well as the other states of the peninsular India. Besides two seasonal monsoons which give sufficient rain fall, sometimes cyclonic storms occur during the later part of the year bringing with them a deluge of rain which goes to swell the averages. Along the coast the rain fall in Machilipatnam and Divi taluks of the Krishna district is comparatively heavier than in other parts of the state. Thus climate, rain fall and the nature of the soil are the active agents for the development of agriculture activity.

Salt is obtained in the east coast exclusively by sea-board evaporation, like north Punjab where it is quarried. Salt manufacturing activity is reported all along the eastern coast which is 960 kms. in length. Salt preparation was a royal monopoly during the Satavahana period.\textsuperscript{33} It seems the preparation of salt pans'Uppuvamulu'\textsuperscript{34} usually commences early in January and it is continued till the start of the rainy season. Salt was a great source of income to the kings of the ancient and medieval periods. It is known from the epigraphical evidence that salt pans were prevalent in
Prakasm and Guntur districts. China Ganjam and Peda Ganjam were great centers of manufacturing salt in the medieval period.

The course of history of the coastal Andhra, like most other parts in the country, has been profoundly influenced by its natural geography. This thorough investigation of the physical features of the coastal Andhra, namely mountain ranges, hilly regions, rivers, river valleys, coast line that is washed by the waters of Bay of Bengal, the rich geological resources has revealed how they have shaped the course of the history of this region and the adjoining regions.

In Andhra almost all the river valleys bear the evidence of the existence of pre-historic man. The material remains in the shape of stone implements have been recovered from different parts of Andhra, for the last one century. The pre-historic investigations were carried out first in Andhra by a number of geologists, civil officers and missionaries. It is only in the second quarter of the 20th century that trained archaeologists carried pre-historic investigations. Nevertheless, the contributions by R.B. Foote to the study of prehistoric culture of Andhra stand as a pioneering work. The earliest record of pre-historic studies dates back as far as 1843 when New Bold discovered ash mounds in this region. Then followed the discoveries by W.King, Bruce Foote, Henry Foot Oldham, Macleod Sewell, Moir, Brackenbury, Cammiade and Burkitt, Manley and Ayyappan.

Bruce Foote has explored the lower and upper valleys of the Manneru river in the Nellore district and collected Palaeoliths comprising mainly of broad, oval and pointed implements. He has reported Palaeoliths and Neoliths from the Cuddapah, Kurnool and Anantapur districts.

Considerable areas of the coastal regions of Guntur and Nellore districts are covered by these superficial deposits of lateritic forming part of the band of sedentary strata. To the south of this, Bruce Foote had discovered the chipped Palaeolithic implements from the beds of shingle and gravel while further to the south, W.King observed that not only lateritic deposits are spread over the surface of Nellore plateau, but also found them scattered in patches all over the region. The finds of pre-historic remains from Krishna district to the north of Guntur is exceedingly small. The lateritic conglomerate of Ramapatnam (Nellore district) are includes many angular quartz fragments and number of poorly made chipped
implements and flakes. From Kandukur area (Prakasam district), several fine implements were found.

It is only in the recent times, that systematic regional studies have been under taken by Prof. Sankalia and his students and also the Department of Anthropology, Government of Andhra Pradesh. Especially the whole of Cuddapah, Chittoor, Nellore, Guntur and Nalgonda districts have been thoroughly explored. Traces of Palaeolithic cultures have been recorded in Mahaboobnagar, Medak, Karimnagar, Adilabad, Krishna, East Godavari and Visakhapatnam districts. All these works reveal the earliest evidence of man’s existence, in the form of stone tools, recovered from the boulder or pebbly gravel laid down on the tertiary rocks by different rivers and their tributaries and several open air stations, belonging to Lower Palaeolithic period.

The relics of the Middle Palaeolithic or the Middle stone age in Andhra have been recovered in many places. River Gundlakamma and its tributaries (Prakasam district) have stratified sections bearing tool-types of this cultural phase. Yelesvaram in the Krishna district has produced artifacts of this period from a gravel layer below the Ikshavaku deposits. There is a marked departure in the use of raw material in the Middle Palaeolithic industries of this region from the rest of the Indian sub-continent. In the whole of Cuddapah basin, fine grained quartzite of different shades, forms the source of raw material except at the few sites where the siliceous rocks are used. The Middle Palaeolithic industry near Visakhapatnam is based on vein quartz, and coarse grained quartzite. From this, it is clear that the use of raw material differs from region to region with in Andhra and broadly different from the Indian pattern. This is primarily due to the impact and influence of natural geography. Recent investigations in Andhra have brought to light a well defined blade-burin industry succeeding the Middle Palaeolithic. This represents Upper Palaeolithic phase. These industries are not as widespread as the two preceding stages, viz., the lower and middle Palaeolithic phases. Traces of this phase are noticed in the Nagarjunakonda area of the Krishna district apart from Kurnool and Chittoor districts.

The discovery of cultural traits of Neolithic period was first made by Bruce Foot. The important Neolithic sites in the Coastal Andhra are Nagarunakonda, Jami, Madhuravada, Yelesvaram, Chebrolu, etc. The Neolithic phase is
characterised by ground and polished stone implements, the raw material being mostly 'trap' in the place of quartzite used in the Palaeolithic. However, chert is preferred around Visakhapatnam region. The new technological innovation indicates a distinct cultural stage of food production as opposed to food gathering which is the means of subsistence in pre-Neolithic stages. The Neolithic cultural remains including pits, the plan of an oblong house, blunt butted axes, fabricators, potsherds and crystal microliths found at Nagarjunkonda confirm the site be typically Neolithic in nature.

The Neolithic phase is succeeded by the Megalithic stage. Yelesvaram and Nagarjunkonda in the Krishna district and Jami and Madhuravada in the Visakhapatnam district yielded evidence for Megalithic phase.48

The most important economic aspect of the period under survey (i.e. from the Satavahanas unto the fall of the Kakatiyas) is the land grants. They are of two types. In the first type, the kings used to assign lands to the officials in lieu of the services rendered and those going to be rendered to the state in future. In this case, there is an element of liability. In the second type, the land was granted to a Brahmin or a group of Brahmins for their learning, knowledge and the services rendered in the past. In this case, there is no liability. The management of land from Satavahanas to Kakatiyas acquired importance in the formulation of polity of the kingdoms. The political history and their polity is discussed in detail in the following chapter.

A large number of inscriptions under our survey record land assignments and grants.49 It is also observed that in some cases villages were granted to the Brahmanas and temples and they generally termed as agraharas and devadana villages. They are generally exempted from taxation. The donees were allowed to enjoy unlimited powers and privileges in these villages. It is very interesting to note here that in some times the kings, queens and the powerful samantas used to donate to the donees land under cultivation, land cultivable but lying waste. The underlying idea being that the donee was expected to bring the cultivable land lying waste under plough. This is one of the reasons that the agrahara villages were exempted from taxation. Besides, the brahmanas and the temples were also provided with cattle wealth in the form of sheep, cows and bulls. This naturally involved the reclamation of vast area of forests adding to the already existing lands under cultivation.

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Sometimes the deforestation of wild jungle led to the foundation of new villages on the reclaimed land. During the Kakatiya period it is said that they had cleared the forest land near Kocherlakota of Prakasam district and built a new village by Duppadu, i.e. modern Dupadu.50

M.S. Sarma states that agriculture was limited to the regions devoid of forests. He further states that during the middle centuries there were great forests both in the coastal plains and in the mountain regions. From Trilochana Pallava to the Kakatiya Prataparudradeva, each and every local dynasty brought great patches of land under cultivation and increased the extent of arable land. Growing auspicious tress in the gardens along with the agriculture was also practised.51

Expansion of the cultivation resulted in agricultural surplus, which improved the material condition of the people of the region. Due to expansion of the cultivation, necessity arose to manage land utilisation. Hence we found special references in the epigraphs regarding land protection, use and proper maintenance. Industries based on the agriculture like weaving, tantuvaya52 and perfumes flourished.

The coastal Andhra desa experienced brisk internal and external trade in the ancient and medieval period. The development of trade depended upon trade routes, port cities, transport facilities, agricultural surplus and goods, forests and mineral wealth, industry, and above all on the patronage and essential protections extended by the rulers.

Several trade routes radiated from coastal Andhradesa and some of them are noted here. The country of Vengi was a great meeting place of several prominent trade routes. From Vengi one trade route led to Kalinga, i.e. towards north-east. It passed through Arugolu, Pitahapuram, Kodavalli, Ramatirtham and Salihundam on the east coast. The second route led to south cuts through Pedda Ganjam and Kanuparti. The third one led to Karnataka via, Allur, Ramireddipalli and Jaggayyapeta. The last one led to Kosala. This started from Vengi and led to the centre of India via Guntupalli and Nagapur.53 G.J. Dubreuil who thoroughly studied the course and nature of these trade routes concluded that the commerce of India with the Far East and South-East Asian countries was carried from Vengi on the east-coast, but not from Tamralipti or from the ports of Orissa.53
The coastal Andhra desa was also endowed with flourishing sea ports in the ancient and medieval periods. Referring to the eastern ports the *Periplus of the Erythrian Sea* states that Masolia\(^4\) (Machilipatnam) was "the sea board of country extending far in land. " Here immense quantities of tine muslins were manufactured.\(^5\) Machilipatnam was connected by land routes with Dhanyakataka or Amaravati as well as Paithan or Pratishtana- the capital of the Satavahanas. Ghantasala\(^6\) (Kantakasaila) was the other important port and is located 20 Kms from Masolia, and at the mouth of the Krishna river. The river Krishna was navigable enough to carry goods to great distances inland, the wide sea could also be used for trade expansions. Koddura,\(^7\) i.e. the present Guduru in the Krishna district was another trade centre and it is not far away from Ghantasala. Ptolemy gives more information regarding the ports of Coastal Andhra desa. The mouth of the Pinakini-Manarpha, the mouth of Manneru in Prakasam district, Kottisa (Alluru-Kottapatnam in Guntur district) the mouth of the Krishna, Kontakosalya, i.e. Ghantasala Allosgyna, the point of departure of Chryse is some of the ports and marts mentioned by the Greeks.\(^8\)

The list of ports that were referred to by the foreign seamen proves that the maritime trade was conducted through the river transport and over-seas from the east coast. Further this is attested by the discovery of Roman coins at Vinukonda in the Guntur district, Nellore in the Nellore district, Nagarjunakonda and Vijayawada in the Krishna district.\(^9\)

Dhanyakataka won considerable importance industrially and commercially towards the beginning of the first century A.D., textile industries in the west and central India must have been served by the maritime districts of the east coast entering round Dhanyakataka from which there was easier transit by sea to ports like Kalyan, Sopra etc.\(^10\)

There was a great sea board extending from the submerged Kalingapatteanam to lake Pulecat in the south. A number of small rivers like the Rishikulya, Varnashara, Nagavali, Sarada, Tandava, Gundlakamma, Pinakini and Svarnamukhi offered safe anchorage at their mouths for the vessels bound to the east and to crown it the Godavari and Krishna were navigable for a long distance into the inland. Dr. J.F. Fleet states that there was an early trade route which started either from
Vinukonda or from Masulipatnam and reached Broach via Golconda, Ter and Paithan. The trade route from Masulipatnam took not only the local traffic from the coastal districts of the north of the Krishna but also the sea borne traffic from the Far East. The other route which started from Vinukonda in the southern part of the Guntur district served admirably as collecting centre for the local products of the sea side country on the south of the Krishna. The roads from these two places i.e. Vinukonda and Masulipatnam, joined each other at point about 40 kms. Towards the east by south from Hyderabad, or perhaps at a point about 38 kms. Further in the same direction, and from that point the single road ran in the most natural manner through easy country, via Hyderabad, Kalyan, Ter, Paithan and Daultabad to Chandore and Markinda in the west of Nasik district. 

The fertile alluvial lands, the perennial rivers, salubrious climate, agricultural surplus, trade routes, navigable rivers, the lengthy coast line, port cities, and flourishing agrarian industries, and royal protection and patronage paved the way for the development of trade and commerce in the coastal Andhradesa. Monetization of economy also gave further stimulation for fostering commercial and agricultural activities of this region. The Satavahanas, Ikshavakus, Vishnukundins, Eastern Chalukyas and the Kakatiyas issued coins in various metals. This does not mean that barter system was not favoured in the internal and international trade.

The flourishing commercial activities paved the way for the urbanisation of the Coastal Andhra desa. This very well supported by the rise of cities like Vengi, Ghantasala, Dhanyakataka, Vikramasimhapuri, Masulipatnam, Vinukonda, Koddura, Kottapatnam, Vijayapuri, Vijayawada, Salihundam, Goli and Jaggayyapata. It is of interest to state here that this shows that mercantile community evinced keen interest in patronising agriculture and allied industries which was back bone of their profession.

The flourishing agriculture, prosperous trade and commerce and the forest and mineral wealth of the coastal Andhradesa became a bone of contention between kings. Thus the early Chalukyan king Pulakesin-II invaded the coastal region with the sole intention of occupying the Vengi country in the first quarter of the seventh century A.D. He succeeded in establishing the early Chalukyan supremacy over the Coastal Andhra desa. He appointed his brother Kubja Vshnuvardhana as the
governor of the Vengi region who was subsequently allowed by him to enjoy an independent royal status. This was the starting point of a new dynasty, viz; the Eastern chalukyas of Vengi. Later the Cholas maintained their control over the Vengi mandala till the Kakatiyas established their supremacy on this region. Thus it is evident that the rulers of the Deccan (Chalukyas of Badami) South (the Cholas who later on became Chalukya-Cholas) from the time of Kulottunga-I and the Kakatiyas realised fully the economic importance of the east coast and hence tried their best to bring it under their control.

The long coast line, the alluvial deposits, the river valleys and the flourishing agriculture, trade and commerce of the east coast not only made the ambitious kings to cast their eyes on the region but also tempted many to migrate to that region. The Aryan migration was the first which the coastal Andhra desa, along with the Deccan and South India, witnessed. The Aryans introduced new agricultural methods and iron technology which brought agrarian revolution. The Aryan migration was followed by the Aryanaisation of the native people. This caused ethnic, social, religious, economic, and political changes.

Grierson, regarding the penetration of Aryanism into eastern Deccan and South India, remarks "we have the process before our eyes. Animism is discovered to be orthodoxy. Local aboriginal deities are discovered to identical with Siva or some other member of the Brahmanical pantheon and the distinction of cast is conferred upon the converts. In other respects the aboriginal customs and beliefs are at first left untouched and are allowed to develop themselves into one or the many branches of modern Hinduism." 62

The migration of Brahmins and the Vedic religion to the Andhradesa from North India is also supported by the Buddhist literary works. As already stated above the Suttanipata relates the history of migration of a Brahmin by name Bavari from Kosala to south of Godavari. Even the king of Kalinga honoured him by giving a large amount of money and land for building his asrama. 63 The emergence of the Eastern Chalukyas of Vengi, Cholas and the Kakatiyas of Warangal gave a migration boom to the coastal Andhra desa. The reasons are not far to seek for this boom. The rich alluvial deposits, the flourishing trade and commerce and relatively peaceful conditions that prevailed in the region were mainly responsible for the
migration. The land grants followed by land management and expansion of agriculture gained momentum amply attest it. This aspect is discussed in detail elsewhere in this thesis.

It is evident from the above discussion that the natural geography of coastal Andhra has substantial significance, the long and unending Eastern Ghats with occasional breaks, minor mountain ranges and hillocks, the rivers, rivulets, minor water resources, minor valleys, diversified climatic conditions form the very core of the physical geography of the region under our survey. It shaped the economy, society, conditioned the agrarian economy, fostered agrarian industries, determined the internal and external policies of the rulers and finally promoted both internal and international trade and commerce. Thus, the society, economy, religion, polity and the cultural patterns of the coastal Andhradesa were determined and directed by the natural geography of the region.
REFERENCES


   Chapter 57.


30. Besides this island is now turned into a launching centre for space rockets by the Government of India. Thus the strategically importance of the region gained a new momentum and direction. The Buckingham canal, the gift of the East India Company, skirts its whole length. This further increased the trade and commercial value of the lake. Nellore District Census Report, 1981, p. I ff.


33. *EI*, Vol. VIII,


37. District Gazetteers of Kurnool, Cuddapah and Nellore.


40. *Ibid*.

41. *Ibid*. 

27

43. District Gazetteers, op.cit.


46. Ibid. p. 92.

47. Ibid. p. 95.

48. Ibid. p. 97.


53. G. Jouveau, Dubreuil, in his Foreword to the Buddhist Remains in South India, p. VI ff.

54. Ibid.

55. Schoff, Periplus of Erithrian Sea, pp. 51 ff.


57. EI, Vol. XX, pp. 8 ff.

58. Mc Crindle, Ancient India as described by Ptolemy, p. 68.


60. Robert Sewell, Roman Coins found in India, JRAS, 1904, p. 599.
